



UČNI NAČRT PREDMETA / SUBJECT SPECIFICATION

Predmet:	Analitična mehanika
Subject Title:	Analytical Mechanics

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Fizika Physics		3	6

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Labor work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
45		15			90	5

Nosilec predmeta / Lecturer:

Jeziki / Predavanja / Lecture:
Languages: Vaje / Tutorial:

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Prerequisites:

Vsebina:

- Pregled osnovnih zakonov mehanike.
- Lagrangejeve enačbe.
- Centralne sile in problem dveh teles.
- Kinematika togega telesa.
- Nihanje.
- Hamiltonove enačbe.
- Zanimivi eksotični problemi.

Content (Syllabus outline):

- Survey of the basic principles in mechanics.
- Lagrange equations.
- Central forces and 2-body problem.
- Rigid body kinematics.
- Vibrations.
- Hamilton equations.
- Interesting exotic problems.

Temeljni literatura in viri / Textbooks:

- L. D. Landau, E. M. Lifshitz, Mechanics, Vol. 1 of Course in Theoretical Physics (Pergamon Press, Oxford, 1976).
- H. Goldstein, C. Poole, J. Safko, Classical Mechanics, (Addison Wesley, Reading, 2002).
- G. M. Calkin, Lagrangian and Hamiltonian Mechanics (World Scientific, Singapore, 1998).

Cilji:

Objectives:

Predvideni študijski rezultati:

Intended learning outcomes:

Znanje in razumevanje:
 Globlje razumevanje osnovnih pojmov v mehaniki.

Prenesljive/ključne spretnosti in drugi atributi:
 Rešitev problemov z matematičnimi orodji in celosten pristop k reševanju problemov.

Knowledge and Understanding:
 Deeper insight in the basic ideas of mechanics.

Transferable/Key Skills and other attributes:
 Solving of problems with mathematical tools and gained global approach on solving a problem.

Metode poučevanja in učenja:

Predavanja
 Teoretične računske vaje

Learning and teaching methods:

Lectures
 Theoretical excercises

Načini ocenjevanja:

Delež (v %) /
 Weight (in %)

Assessment:

2 pisna kolokvija ali pisni izpit	50	2 written tests or written or exam oral exam
ustni izpit	50	